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Off-site Sampling in Plum Brook

As part of decommissioning the Reactor Facility at NASA Glenn Research Center's Plum Brook Station, NASA took samples last summer to identify areas that might need to be cleaned. This sampling included Pentolite Ditch, which is the stream into which permitted discharges of water flowed from the reactor during normal operations from 1961 to 1973. Sampling was done with extremely sensitive detection equipment to enable NASA to look for every possible isotope associated with the reactor's operation.

Trace amounts of radioactive material were detected in sediment samples along the length of the ditch. The highest levels were found where the reactor discharged into the ditch, then the levels decreased along the ditch up to where it empties into Plum Brook. Because Plum Brook exits NASA's property about 100 feet beyond this point, NASA decided to do limited sampling along Plum Brook. NASA took 30 samples from four locations in a one-mile stretch from the outfall of Pentolite Ditch to Bogart Road to determine if trace amounts could be found beyond the fence line. Sampling results showed above background, but safe, levels that pose no health concerns. NASA reported the findings to the Nuclear Regulatory Commission and the Ohio Department of Health-Bureau of Radiation Protection and locally to the Erie County Emergency Management Agency and the Erie County Health Commissioner.

NASA then completed a "scoping" survey to determine the extent or boundaries of the material in Plum Brook. The same sensitive detection equipment was used and the water levels in Plum Brook were very low last summer, enabling NASA to find anything that might be present. A total of 80 samples were taken from three miles upstream of Pentolite Ditch to five miles south of it along Plum Brook, to where it meets

Sandusky Bay. Results showed low levels of two radioisotopes – Cesium 137 and Cobalt 60 – primarily in a one-mile stretch from the NASA fence to Bogart Road. While these levels were above background, they do not pose a public health risk to residents or young children living in the area. The radioisotopes were found in the sediment at varying depths up to 18 inches. Given the levels and locations, NASA determined the material was from the reactor's normal discharges when it was operational. Over time, the material accumulated in the sediment.

In keeping with NASA's commitment to keep the community informed with the Decommissioning Project, NASA updated the community about these results in early October using a number of established communication vehicles including the 24-hour, toll-free Decommissioning Information Line and the Decommissioning Website. Decommissioning Community Workgroup members were also informed and were able to respond to questions from the larger community. On October 18, NASA presented the information to the media at the annual project briefing; to Community Workgroup members at their quarterly meeting; and to the public at the project's annual Community Information Session. Subsequently, the Information Line and Website were again updated with information from the presentation.

NASA also checked other off-site locations to ensure there were no other areas impacted by the reactor's historic operations. All results showed that levels were at normal area background with no residual material. NASA also took bone and tissue samples from deer during the annual Plum Brook Station hunts. Samples were analyzed at an off-site independent laboratory, and all results showed the deer had not ingested any radiation.

Next Steps

NASA developed a plan to conduct additional sampling in order to obtain a more complete picture of what radioisotopes exist and to what extent. This comprehensive sampling plan spans a 1.5-mile stretch from Pentolite Ditch to Route 250, involving the collection of approximately 900 samples. The Nuclear Regulatory Commission and the Ohio Department of Health reviewed the plan, and it was given to the Erie County Health Department and the Community Workgroup for review.

NASA also invited property owners who live along or near Plum Brook to a meeting on November 9. The meeting's purpose was to provide an update on the findings; to explain that these levels do not pose a health concern; to announce the plans for additional sampling that will involve their properties; and to discuss obtaining permission to enter their properties to obtain samples. Attendees were encouraged to voice their questions and concerns.

Sampling began on November 14. To date, more than 250 sediment samples have been taken from an 1,800-foot stretch of Plum Brook adjacent to land owned by NASA and the Perkins Board of Education on Taylor and Bogart Roads for analysis at laboratories contracted by NASA. In addition, a number of "split samples" have been taken for independent analysis by the Ohio Department of Health. NASA is looking at the results as they come back. Results to date are encouraging in that all these samples were below the levels found earlier and many are at normal background.

NASA expects to complete sampling this spring. Based on the results of the sampling, NASA will work with the appropriate federal, state and county agencies to take whatever action is necessary. NASA remains committed to protecting the health of the public, the workers and the environment throughout the decommissioning process. Decommissioning will not end until all actions are complete and all federal, state and county agencies concur.